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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,848	10/10/2001	Andre Hecq	P 63014 US 0	6458

7590 06/30/2004

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EXAMINER

DICUS, TAMRA

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,848

Applicant(s)

HECQ ET AL.

Examiner

Tamra L. Dicus

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 46-75 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 46-75 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Cancellation of claims 1-45 and the RCE is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 46-55, 57-66, and 68-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,877,103 to Dupont et al. in view of USPN 6,068,914 to Boire et al., and further in view of USPN 6,103,650 to Krumwiede.

Dupont teaches a substrate made of colored soda-lime glass composed of glass-forming constituents and coloring agents measured with Illuminant C having a glass thickness of at least 3 mm when applicable for vehicles and possibly more than 4 mm up to a thickness of 6 mm, further meeting the limitation of instant claim 61 when used in buildings at col. 5, lines 1-68 and col. 6, lines 1-18. To instant claim 60, that if the coating is applied to a 4 mm thick clear glass and what would happen thereafter is not a positive recitation and does not afford patentable weight.

Dupont does not explicitly state a pyrolytic coating deposited on the substrate. Nevertheless, Dupont does disclose it is known to provide a metal oxide coating glazing in order to reduce heating by solar radiation, thereby reducing the interior heat in a vehicle at col. 6, lines 3-6. The Examiner contends the glazed metal oxide coating is equivalent to a pyrolytic coating. Moreover, Boire teaches a glazing panel having an antireflection coating which are pyrolysed on glass substrates at col. 2, lines 4-25 and col.

Art Unit: 1774

3, lines 1-10. Hence it would have been obvious to one of ordinary skill in the art to modify the colored soda-lime glass substrate of Dupont to include a pyrolysed coating for the purpose of providing heat reducing characteristics as taught by Dupont and to provide antireflection properties as taught by Boire at col. 3, lines 10-26.

Dupont does not teach an emissivity of less than 0.3 and transmission comparison properties, however such properties would be expected absent any evidence to the contrary. Moreover, at col. 9, line 7, Boire's substrate exhibits selectivity of at least 1.65, which is included in Applicant's claimed range of at least 1.1, see also col. 5, line 43. To the selectivity comparison of coated to uncoated glass would be expected absent any evidence to the contrary. Boire expresses the importance of choosing glass thickness in order to impart the selectivity properties and further teaches the applicability of such a glass for vehicles refer to col. 1, lines 45-47, col. 5, lines 12-20, and therefore chooses the thickness of the soda-lime glass substrate of 4mm in Example 1. It would have been obvious to one of ordinary skill in the art to modify the colored soda-lime glass substrate of Dupont to include a selectivity and emissivity values as required because Boire expresses the importance of choosing glass thickness in order to impart the selectivity properties for applicability of such a glass to vehicles (col. 1, lines 45-47, col. 5, lines 12-20 of Boire).

To instant claim 46 parts A-D (further to instant claims 47-50), Dupont teaches a soda-lime glass composition comprising Fe_2O_3 from 0.75 to 1.80%, falling within Applicant's range of 0.7-1.3% and 0.9-1.8%, and Co from 0.0040-0.0180% at col. 3, lines 34-35. Dupont does not expressly disclose adding FeO , MgO , or V_2O_5 and their corresponding weight %. Krumwiede teaches a soda-lime-silica glass composition of

Art Unit: 1774

FeO (0.17-0.52 wt %, falling within Applicant's range of 0.18-0.27% and 0.40 to 0.52%), Fe₂O₃, Co, and the addition of V₂O₅ (0.1-.32 wt%, 0.1% abutting Applicant's range 0.0050 to 0.1%) in order to impart a yellow-green color to glass and for the adsorption of UV and IR radiation at col. 2, lines 45-46, col. 6, lines 61-62, and col. 7, lines 35-39. MgO is added between 0 and 5% (patented claim 1 of Krumwiede). Boire, Krumwiede, and Dupont are analogous art because all references are in the same field of endeavor, namely glass manufacturing. Hence it would have been obvious to one of ordinary skill in the art to modify the soda-lime glass of Dupont to further include the below ingredients as claimed:

- FeO - to impart a blue color and absorb infrared radiation as taught by Krumwiede at col. 2, lines 45-46and
- V₂O₅ - to impart a yellow-green color and absorptive properties as taught by Krumwiede at col. 7, lines 35-36.
- MgO – as it employs conventional wt % commercially for soda-lime glass (col. 2, lines 20-25 of Krumwiede).

Regarding instant claims 51-53, parts E-G, claims 73-75 to the transmission wavelength properties of the coating and substrate and instant claims 62-66 and 68-72 to a light reflection and /or transmission factor and selectivity, Dupont does not teach. However such properties would be expected as similar materials and the same thickness of 4mm are used. Further the transmission factor being measured with Illuminant C is taught by Dupont at col. 1, lines 41-45 and transmission being less than or equal to 65% is taught by Boire at col. 7, lines 25-30 (per instant claims 68-70 being less than 70%).

Art Unit: 1774

To instant claims 54-55 to the inclusion of selenium and chromium Cr₂O₃, Dupont does not teach, however, Krumwiede teaches the use of both at col. 1, lines 23-25 and col. 7, lines 33-44 to further control infrared and ultraviolet radiation and color. See patented claim 1 of Krumwiede also. It would have been obvious to one of ordinary skill in the art to modify the soda-lime glass of Dupont to further include selenium and chromium Cr₂O₃ for the purpose of controlling infrared and ultraviolet radiation and color as taught by Krumwiede at col. 1, lines 23-25, col. 7, lines 33-44, and patented claim 1.

Regarding instant claims 57-59, the limitations "the coating is deposited by or treated" are process limitations in a product claim. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. Patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113). Furthermore, the invention defined by a product-by-process invention is a product NOT a process. *In re Bridgeford*, 357 F. 2d 679. It is the patentability of the product claimed and NOT of the recited process steps which must be established. *In re Brown*, 459 F. 2d 531. Both Applicant's and prior art reference's product are the same. Further, Boire teaches glass substrates may undergo various heat treatments including bending, tempering, or annealing at col. 7, lines 30-33.

Claims 56 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,877,103 to Dupont et al. in view of USPN 6,068,914 to Boire et al., and further in view of USPN 6,103,650 to Krumwiede, and further in view of USPN 5,989,717 to Allemand et al.

Art Unit: 1774

Dupont is relied upon above. Dupont does not teach instant claims 56 and 67 to the addition of fluorine-doped tin oxide and an underlayer, respectively. However, Allemand teaches electrochromic devices that are applied in glazing mirrors of vehicles at col. 5, line 40-45. Allemand teaches applying fluorine-doped tin oxide to soda-lime glass for the purpose of increasing light transmission and inhibiting reflected color at col. 7, line 48 and col. 8, lines 23-34. Allemand teaches placing an additional layer (underlayer of instant claim 67 J) between the fluorine-doped tin oxide coating and glass substrate at col. 8, lines 23-25. Allemand and Dupont are analogous art because both references are in the same field of endeavor, namely glass manufacturing. It would have been obvious to one of ordinary skill in the art to modify the glass of Dupont to further include fluorine-doped tin oxide and an underlayer for the purpose of increasing light transmission conduction, and/or inhibition of reflected color at col. 7, line 48 and col. 8, lines 23-34 of Allemand. The limitation “deposited by ...” are process limitations in a product claim. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. Patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113). Furthermore, the invention defined by a product-by-process invention is a product NOT a process. *In re Bridgeford*, 357 F. 2d 679. It is the patentability of the product claimed and NOT of the recited process steps which must be established. *In re Brown*, 459 F. 2d 531. Both Applicant’s and prior art reference’s product are the same.

Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,877,103 to Dupont et al. in view of USPN 6,068,914 to Boire et al., and further in view

Art Unit: 1774

of USPN 6,103,650 to Krumwiede, and further in view of USPN 5,989,717 to Allemand et al. and further in view of GB 2302101 A to Hannotiau et al.

Dupont is relied upon above. Dupont does not teach the parts K and L of instant claim 67 to the tin antimony molar ratios (K. the coating is an oxide coating which is preferably deposited by vapour-phase pyrolysis and comprises tin and antimony in a molar ration Sb/Sn of between 0.04 and 0.16; L. the coating is an oxide coating deposited by pyrolysis which comprises tin and antimony in a molar ratio Sb/Sn of between 0.01 and 0.5 and its thickness is between 250 and 500 nm.). Hannotiau teaches using tin and antimony in a glazing panel on a glass substrate for vehicle windows for the advantage of providing solar screening properties which includes properties such as a selectivity of at least 1.3, luminous/light transmittance of less than 35%, having a thickness of at least 400 nm in the same range as Applicant and a molar ratio of 0.05 to 0.5 in the same range as Applicant at pg. 4, lines 21-28. Hannotiau also teaches using a silicon oxide coating under soda-lime glass for the benefit of inhibiting the migration of sodium ions during high temperature treatment at pg. 6, lines 25-29. Therefore, it would have been obvious to one of ordinary skill in the art to modify the glass of Dupont to include tin and antimony in the molar ratios from 0.01 up to 0.5 with a thickness between 250 and 500 nm in order to provide a glass structure with a low total transmitted energy factor while retaining a sufficient level of light transmission, low emissivity, and a low solar factor as taught by Hannotiau at pg. 6, lines 3-10, and to inhibit the migration of sodium ions. See the properties to total transmission, selectivity, and purity are all properties taught by Hannotiau in Table A.

Response to Arguments

Applicant's arguments filed 04-21-04 have been fully considered but they are not persuasive. Applicant argues the Examiner has previously indicated that certain claimed properties are allegedly inherent since, according to a prior office action, the same materials and thickness of 4 mm are used. However, because the Applicant has amended the claims to overcome the 102 rejection, the indication is now obvious as Boire teaches selectivity properties are determined by the thickness. Further, because the same thickness of 4 mm is taught by the prior art references, one would expect any other properties (e.g. emissivity, selectivity comparisons, Ill C values, light transmission, dominant wavelength comparisons) that derive from the thickness to be obvious to what Applicant has claimed. Applicant has not provided any objective evidence to state the coated glass combination would not serve to function in the same manner as claimed. If Applicant insists that such properties are not expected, Applicant is invited to prove this by way of comparative test results or declaration. Once a reference teaching a product appearing to be substantially identical is made the basis of a rejection, and the Examiner presents evidence or reasoning tending to show inherency, the burden shifts to the Applicant to show an unobvious difference. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." See MPEP 2112.

Applicant also argues the composition of the glass substrate and/or coating layer would influence the transmission properties. Again, Applicant has not provided in objective

Art Unit: 1774

evidence to state differently. Similar compositions are taught, the ranges either overlap or touch a point within Applicant's range, one skilled in the art would naturally expect similar properties. Further, if Applicant insists that his range is somehow different the burden shifts to Applicant to prove so, as merely adjusting weight percentages are obvious. The experimental modification of this prior art in order to ascertain optimum operating conditions fails to render Applicant's claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. Applicant further argues the rejection is based on a hypothetical combination. However, no such hypothetical combination was used as previously set forth, the combination was and still is based off of evidence provided by the prior art. Applicant argues the motivation to combine Allemand and its purpose. Allemand is used to show fluorine-doped oxide and V₂O₅ are well known additives to a soda-lime glass for effecting light transmission and inhibiting reflected color. Since the same materials are taught, naturally an emissivity value of less than 0.3 will follow. Motivation exists to combine Allemand since all references address glass modifications, despite Applicants contentions toward the opposite (e.g. "the mere fact that patents relate to "glass technology" or modifications of "glass" is not the test). Applicant claims a glazing requiring glass and all of the prior art of record teaches similar coatings/glazings for glass. Applicant is only claiming glazing and not a certain type of device. *Prima facie* obviousness is not rebutted by merely recognizing additional advantages or latent properties present in the prior art. Mere recognition of latent properties in the prior art does not render nonobvious an otherwise known invention. *In re Wiseman*, 596 F.2d 1019, 201. Further, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art

Art Unit: 1774

cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). The Examiner does not agree with Applicant's allegations toward the record being devoid of objective evidence, because the evidence has been set forth as stated above.

The following references are still used in the rejection as set forth above for the following reasons:

- USPN 6068914 to Boire et al. still teaches a glass substrate exhibiting the selectivity of at least 1.65, which is included in Applicant's claimed range of at least 1.1. See col. 5, line 43.
- USPN 5,877,103 to Dupont teaches a substrate made of colored soda-lime glass composed of glass-forming constituents and coloring agents measured with Illuminant C having a glass thickness of at least 3 mm up to 6 mm at col. 5, lines 1-68 and col. 6, lines 1-18.
- USPN 6,103,650 to Krumwiede teaches a soda-lime-silica glass composition of FeO, Fe₂O₃, Co, and the addition of V₂O₅ within Applicant's ranges for the adsorption of UV and IR radiation at col. 2, lines 45-46, col. 6, lines 61-62, and col. 7, lines 35-39.
- USPN 5,989,717 to Allemand et al. teaches applying fluorine-doped tin oxide to soda-lime glass for the purpose of increasing light transmission and inhibiting reflected color at col. 7, line 48 and col. 8, lines 23-34.
- GB 2302101 A to Hannotiau et al. teaches using tin and antimony in a glazing panel on a glass substrate for vehicle windows for the advantage of providing solar screening properties which includes properties such as a selectivity of at

Art Unit: 1774

least 1.3, luminous/light transmittance of less than 35%, having a thickness of at least 400 nm in the same range as Applicant and a molar ratio in the same range as Applicant at pg. 4, lines 21-28.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is 571-272-1519. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tamra L. Dicus
Examiner
Art Unit 1774

6/28/04

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Cynthia H. Kelly